AMERICAN DYNAMICS™

SpeedDome Optima

PROGRAMMABLE DOME CAMERAS

SpeedDome Optima delivers the standard features of a programmable dome, but is priced comparably to a PTZ. This provides an alternative for customers who prefer the convenience and programmability of a dome camera, but previously considered domes to be price-prohibitive.

Choose from several innovative mounting options, including hard ceiling and 2x2 tile, as well as wall and pendant mounts (for both indoor and outdoor applications). And because the dome contains all of the necessary install components, installation is a breeze – just 15 minutes from box to ceiling for the hard ceiling mount. The dome's power-on diagnostics and functional tests assist with fault isolation during install and service.

The dome accommodates a variety of protocols, including RS-422/RS-485, Manchester and SensorNet, making it compatible with any American Dynamics controller or matrix switcher/ controller system.

The dome features a color camera with 22x optical zoom (11x digital) and 470 TV lines resolution, providing a quality, high-resolution picture. The dome also provides user-programmable presets and patterns, and contains one alarm input and an auxiliary output.

FEATURES

- Color camera with up to 242x zoom (22x optical, 11x digital)
- 470 lines horizontal resolution
- Zoom adjusted programming
- Auto focus and auto iris
- Auto white balance
- Automatic gain control
- Line-lock
- Supports RS-422 /RS-485, Manchester, and SensorNet protocols
- Up to 96 user-definable presets
- Unshielded Twisted Pair (UTP) wiring video transmission enabled as standard
- Three user-definable patterns
- One alarm input
- One auxiliary output
- Indoor and outdoor versions
- Power-on functional tests
- LED diagnostics
- Easy to install and service
- Priced comparably to a PTZ, with more features and easier to install
- Stepper motors with micro-step control
- Selectable home position

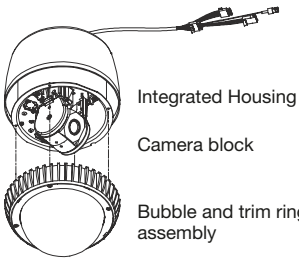
FEATURES

- Integral 22x optical zoom (11x digital) and 470 lines horizontal resolution provide a quality, high-resolution picture.
- Advanced third generation Digital Signal Processing (DSP) CCD camera delivers sharp, detailed images.
- Zoom Adjusted Program (ZAP) automatically adjusts pan and tilt speeds in proportion to zoom position, even at 22x magnification.
- Automatic white balance allows the camera to automatically adjust the white balance of the image, providing optimal image quality.
- The automatic focus provides clear images without the need for manual adjustments.
- The auto iris provides visible scenes without the user having to manually compensate for diverse lighting conditions.
- The dome's endcap or flying lead connection method makes the dome easy to install and service – as little as 15 minutes from box-to-ceiling.
- The dome is available in both indoor and outdoor versions.
- The dome supports up to 96 user-definable presets and three user-definable patterns.
- Unshielded Twisted Pair (UTP) wiring video transmission enabled as standard saves on wiring and installation costs.
- The dome incorporates an automatic flip feature. This feature enables the dome to automatically turn 180° when the camera tilts to its lower limits and stays in that position for a brief speed-proportional delay.
- Vertical sync phase adjustment is provided to help compensate for different phases of power when line-lock is enabled, making it ideal for single and multi-phase power installations.
- Surge protection.
- Alarms are processed externally by the controller, and can automatically call a preset, run a pattern, or activate an auxiliary output when the alarm is activated.
- The dome contains a series of diagnostic LEDs for power, communication, network type and failure mode.
- The fully isolated power supply helps eliminate ground loops.
- Sensing of 50/60 Hz line is automatic and does not require manual adjustment.
- Allows daisy chain configuration of control wiring.
  - For RS-422/RS-485: 10 domes at a maximum distance of 1 km (3,000 ft) on two 22 AWG shielded twisted pairs (STP).
  - For SensorNet: 32 devices at a maximum distance of 1 km (3,000 ft) on one 22 AWG unshielded twisted pair (UTP).
  - For Manchester: 3 domes at a maximum distance of 1.5 km (5,000 ft) on one 18 AWG shielded twisted pair (STP).
- Selectable (on/off) home position.

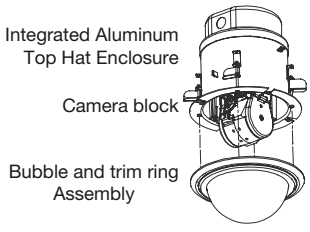
Two Housing Options

The integral housing model, which is constructed of ABS plastic, is suitable for both indoor and outdoor applications. This model incorporates a flying lead connection for mechanical and electrical cabling. The outdoor version of the integral housing model is weather and tamper-proof, and contains a heater/blower that protects the dome. In extreme temperatures, the housing's built-in fan prevents the dome from overheating, and the built-in thermostat and heater prevent ice from forming on the outside bubble.

The in-ceiling model is designed with an integrated aluminum top hat enclosure and plenum cap with swing-out tabs that grasp ceiling material, ensuring a secure and easy installation. This model utilizes a endcap connection for mechanical and electrical cabling. The in-ceiling model is for indoor applications only.



Integral Housing Model



In-Ceiling Model

SPECIFICATIONS

Operational

Manual Pan/Tilt Speed .....1° to 50° per second (based on zoom position)
Preset Pan/Tilt Speed .....100° per second, maximum
Pan Travel .....360° continuous
Tilt Travel .....> 90°
Pan/Tilt Accuracy .....± 0.5°
Zoom/Focus Accuracy .....± 0.5%
Optical Zoom 22X
Digital Zoom 11X
Bubble Density .....Clear (f0.0) or smoked (f1.0)

	Programmable Presets		
Controller	**SensorNet**	**Manchester**	**RS-422**
ADTT16E	96	N/A	N/A
ADTT16E via RCSN422	N/A	N/A	4
MegaPower 48	96	64	96
MegaPower 168 via CCM	64	64	64
MegaPower 168 via AD2091	N/A	64	N/A
MegaPower 168 via AD2083-02B	N/A	N/A	16
MegaPower 1024 via AD2091	N/A	64	N/A
MegaPower 1024 via AD2083-02B	N/A	N/A	16
AD2150	N/A	64	N/A
AD2150 via AD2083-02B	N/A	N/A	16
VM96	Unlimited	N/A	Unlimited

Programmable Patterns 3
Auto Synchronization
  Line-Locked .....Remote V-phase adjustment
  Internal .....Built-in sync generator
Address Range
  RS-422/RS-485 .....1 to 99
  Manchester .....1 to 64
  SensorNet .....1 to 255
Alarm Inputs 1
Auxiliary Relay Outputs 1

Electrical

Input Voltage .....24 to 30 VAC, Class 2 LPS
Design Tolerance .....16 to 36 VAC
Line Frequency .....50/60 Hz
Power Consumption
  Indoor .....21 watts maximum
  Outdoor .....80 watts maximum
Power-on In-rush current .....3 amps
Allowable Drop-out .....33 ms
Surge Protection
  Video .....Low-capacitance Zener suppressor of 6.5 V, 1500 watts
  SensorNet/Manchester .....Isolation transformer coupled, 2000 Vrms; PTC resettable fuse protects transformer; TVS rated at 5.6 V, 40 A, 0.1 joules; 10 kA impulse rated gas tube, 8/20 µsec impulse
  RS-422/RS-485 .....Series resistors of 33 Ω; TVS rated at 5.6 V, 40 A, 0.1 joules
  Alarm Input .....Series resistors of 33 Ω; TVS rated at 5.6 V, 40 A, 0.1 joules
  Auxiliary Output .....100 V isolation form 1-C relay
  Power Line .....TVS rated at 60 V, 250 A, 1.5 joules; 10 kA impulse rated gas tube, 8/20 µsec impulse

Camera

Imager .....Interline transfer 1/4 inch CCD array
Scanning System .....2:1 interlace
Video Output .....1.0 Vp-p, 75 Ω composite
S/N Ratio .....48 dB (typical)
Horizontal Resolution .....470 lines at center
Minimum Illumination .....1.5 lux (20 IRE, AGC on)
Gain Control .....Automatic (AGC)
White Balance .....Through the Lens (TTL) Automatic Tracing White Balance (ATW)
NTSC
  Pickup Device .....768 (H) x 494 (V) pixels
  Scanning .....525 lines, 60 fields, 30 frames
  Horizontal .....15.734 kHz
  Vertical .....59.9 Hz
PAL
  Pickup Devices .....752 (H) x 582 (V) pixels
  Scanning .....625 lines, 50 fields, 25 frames
  Horizontal .....15.625 kHz
  Vertical .....50 Hz

Lens

Design .....Aspherical
Aperture f1.6
  4 mm .....47.0° (H) x 35.2° (V)
  88 mm .....4.0° (H) x 3.0° (V)
Focal Length .....4 to 88 mm

Field of View Formulas
  Horizontal View = (.8 x A)/B
  Vertical View = (.6 x A)/B
    A = distance from camera in meters or feet
    B = zoom power (e.g. 1-242x)

Model Numbers

RASINHS*	Indoor Hard Ceiling, Smoked Bubble (NTSC)
RASIPHS-1*	Indoor Hard Ceiling, Smoked Bubble (PAL)
RASINHC*	Indoor Hard Ceiling, Clear Bubble (NTSC)
RASIPHC-1*	Indoor Hard Ceiling, Clear Bubble (PAL)
RASINPS	Indoor Pendant, Smoked Bubble (NTSC)
RASIPPS-1	Indoor Pendant, Smoked Bubble (PAL)
RASINPC	Indoor Pendant, Clear Bubble (NTSC)
RASIPPC-1	Indoor Pendant, Clear Bubble (PAL)
RASONPS	Outdoor Mount, Smoked Bubble (NTSC)
RASOPPS-1	Outdoor Mount, Smoked Bubble (PAL)
RASONPC	Outdoor Mount, Clear Bubble (NTSC)
RASOPPC-1	Outdoor Mount, Clear Bubble (PAL)

*Optional RH2X2 mount for 2x2 tile ceilings.

Mechanical

Dimensions (H x D)	
In-Ceiling Model	
Total	301 x 190.5 mm (11.9 x 7.5 in)
Above Ceiling	207.4 x 190.5 mm (8.2 x 7.5 in)
Below Ceiling	92.7 x 178 mm (3.65 x 7.0 in)
Integral Housing Model	303 x 243.5 mm (11.9 x 9.6 in)
Weight	
In-Ceiling Model	2.5 kg (5.5 lbs)
Integral Housing Model	
Indoor	2.7 kg (6.1 lbs)
Outdoor	3.0 kg (6.6 lbs)

Environmental

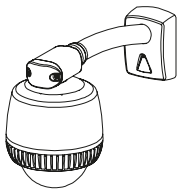
Weatherproof Standard (outdoor models)	IP66/NEMA4
Operating Temperature	
Indoor	-10° to 50° C (14° to 122° F)
Outdoor	-40° to 50° C (-40° to 122° F)
Humidity	0 to 95% RH (non-condensing)
Storage Temperature	-20° to 65° C (-4° to 149° F)
Wind Loading	Sustain winds of 240 km/hr (150 miles) when properly installed and mounted (wall, pole, ceiling, and over the roof mount with proper support).

Regulatory

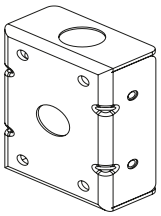
Emissions	FCC: 47 CFR Part 15, Subpart B Class A CE: EN55022 Class B CE: EN6100-3-2 CE: EN6100-3-3 AS/NZS 3548, Class A CISPR22 ICES-003
Immunity	CE: EN50130-4
Safety	UL: UL1950 CUL: CSA 22.2 No. 950 CE: EN60950 IEC950

RHOSW
Indoor/Outdoor
Short wall mount
with end cap assembly

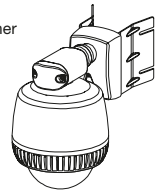
RHOLW
Indoor/Outdoor
Long wall mount
with end cap
assembly



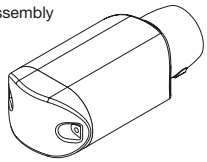
RHOWPA
Indoor/Outdoor Pole
strap adapter for
RHOSW and
RHOLW



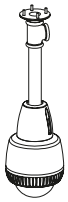
RHOWCA
Indoor/Outdoor Corner
bracket adapter for
RHOSW and
RHOLW



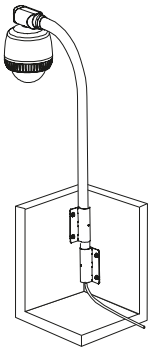
ROENDC
Indoor/Outdoor
End cap assembly
adapter



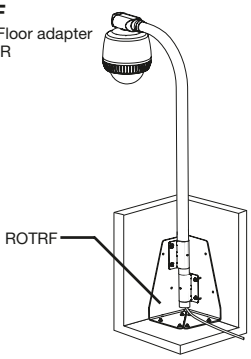
RHOPN
Indoor/Outdoor
pendant mount



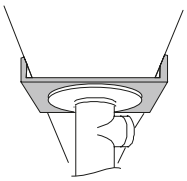
RHOTR
Outdoor Over-the-roof
mount with end cap
assembly



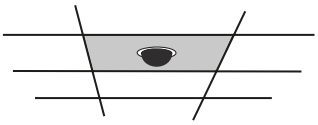
ROTRF
Outdoor Floor adapter
for RHOTR



RHIUIB
Indoor I-beam
clamp



RH2X2
Indoor 2' x 2'
Tile mount plate



Product specifications and availability subject to change without notice.
Certain product names mentioned herein may be trade names and/or registered trademarks of other companies.

VS215-08 01/06 A4
©2006 Sensormatic Electronics Corporation